PROJECT TITLE : BIOTECHNOLOGY

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GLUCOSE : NITRATE RATIO (1)

The dilution rate of the continuous denitration strongly influences the consumption of glucose. At a dilution rate of 0.1 hr^{-1} the glucose : nitrate ratio was found to be 36.9. At a dilution rate of 0.2 hr^{-1} the same ratio was lowered to a value of 25.8.

AMMONIA CONCENTRATION IN BURLEY STRIP EXTRACTS (2)

The hypothesis was postulated that a part of the ammonia found in a Burley strip extract prepared at 80°C is due to a decomposition of organic substances at this temperature (3). In order to clarify this question, two extracts were prepared at 20°C and 80°C. The two extracts showed the same N-total, $N\text{-}NH^{+}_{4}$ and $N\text{-}NO^{-}_{3}$ values.

STRIP-EXTRACT DENITRATION (1.2)

Some problems were encountered with the denitration of strip-extracts at higher dilution rates (4,5).

No positive results could be obtained by lowering the extraction temperature of Burley strips from 80°C to 20°C.

The addition of salts and trace elements in quantities as they are found in the DIFCO yeast-extract improved the capacity of the denitration slightly. The dilution rate could be raised from 0.8 hr^{-1} to 0.1 hr^{-1}. Most probably the elements Mn, Mo and Zn caused this effect.

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A totally normal denitration could be achieved (using the glucose : nitrate ratio of 36.9) if the strip extract was prepared in a strip : water ratio of 1 : 15. The minimal strip : water ratio that can be tolerated in the denitration process will be determined, as well as the factors that inhibit the denitration in more concentrated extracts.

REFERENCES

1) Berney-J., notebook 81 03 04.

2) Hofer-M., notebook 81 03 02.

3) Ruf-C., Monthly Report, Nitrate Reduction by Controlled Fermentation, May 1981.

4) Schulthess-D., Monthly Report, Biotechnology, February 1981.

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